

REMARKS

This is a full and timely response to the non-final Office action mailed 23 January, 2009. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

Present Status of Patent Application

Upon entry of the amendments in this response, claims 1-3, 7, and 11-20 are pending in the present application. More specifically, claims 8, 9 and 10 have been withdrawn previously as a result of a restriction requirement; claims 3, 7, 11, and 14-20 are previously presented claims; claims 4-6 has been cancelled without prejudice, waiver or disclaimer; and claims 1, 2, 12 and 13 have been currently amended without introduction of new matter. Applicants reserve the right to pursue the subject matter of the canceled claims in a continuing application if they so choose, and do not intend to dedicate the subject matter to the public.

Reconsideration and allowance of the application and presently pending claims (including withdrawn claims) are respectfully requested.

A. Indication of allowability

Applicants sincerely thank Examiner for indicating that claim 4 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In view of this indication, Applicants have rewritten independent claim 1 so as to incorporate the subject matter of allowable claim 4, thereby placing independent claim 1, as well as its pending dependent claims, in condition for allowance. Applicants have further opted to amend independent claims 2 and 13 as well so as to incorporate the subject matter of claim 4, thereby making these independent claims (and dependent claims) allowable also. Allowance of all pending claims is respectfully requested as a result of these amendments.

B. Summary of telephone Interview

Applicants thank Examiner Richard Kim for the telephone conversation he had with Applicants' Representative P. S. Dara on April 22, 2009. The telephone call was initiated by Applicants' Representative in order to discuss incorporating claim 4 not only into independent

claim 1 but also into the other independent claims (2 and 13). Examiner has indicated that the amendments appear to be acceptable and that allowance of the pending claims will be considered favorably. Applicants' Representative further requested Examiner to reconsider the withdrawn claims (especially claim 9) in light of the current amendments.

C. Claim Rejections under 35 U.S.C. §112

a) Statement of the Rejection

Claim 7 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites the limitation that the lump is "irregularly shaped". However, claim 7 states that the recess a V-shaped recess. It would seem that as a result, the lump when melted would follow the shape of the recess (V-shaped) and therefore not be "irregularly" shaped. Appropriate correction is required. The same reasoning would also apply to withdrawn claims 8 and 9.

Response to the Rejection

Claim 7

Applicants respectfully traverse the rejection of claim 7 under 35 U.S.C. 112, second paragraph. Applicants specifically traverse the Office action assertion that *"It would seem that as a result, the lump when melted would follow the shape of the recess (V-shaped) and therefore not be "irregularly" shaped."* As can be understood by one of ordinary skill in the art, the shape of the melted lump would be dependent on various factors such as for example: 1) the volume of material used, 2) the amplitude of heat applied, 3) period of time over which the heat is applied etc. etc.

Notwithstanding this fact, Applicants have opted to currently amend claim 1 (from which claim 7 is dependent) so as to move forward prosecution in the case and obtain early allowance of the patent. As amended, claim 1 no longer incorporates the term *"irregularly shaped,"* thereby removing any limitation that may be associated with conforming to a specific shape.

Consequently, Applicants respectfully request withdrawal of the rejection of claim 7 under 35 U.S.C. 112, second paragraph, followed by allowance of the claim.

b) Statement of the Rejection

Claim 7 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the

written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. An irregularly shaped lump occupying a volume that is smaller than a V-shaped recess of the substrate is not described in the specifications. The specifications only describe a V-shaped recess, but does not illustrate or describe the manner in which the lump occupies the V-shaped recess. The same reasoning would also apply to withdrawn claims 8 and 9.

Response to the Rejection

Claim 7

Applicants respectfully traverse the rejection of claim 7 under 35 U.S.C. 112, first paragraph. Applicants specifically traverse the Office action assertion that “An irregularly shaped lump occupying a volume that is smaller than a V-shaped recess of the substrate is not described in the specifications. The specifications only describe a V-shaped recess, but does not illustrate or describe the manner in which the lump occupies the V-shaped recess.” Applicants respectfully submit that the specification not only teaches a V-shaped recess but also teaches the cited characteristics of the lump.

For example, page 3, lines 30-31 cite: “As shown in Fig. 2, the end of stake 130 is heated and reformed, leaving lump 150 securing component 120 in place. The height and nonuniformity of these the lumps precludes the use of printed circuit board 100 in a surface mount environment without rework to remove lump 150...” (emphasis added).

The specification further points out that this handicap may be overcome by using various shaped recesses such as the V-shaped recess, U-shaped recess etc., so as “to contain the volume of heat stake lump 150” (specification page 4, lines 9-10).

In the context of these teachings, Applicants respectfully submit that one of ordinary skill in the art can readily understand the rationale behind using a recess and thereby interpret the recitation of Applicants’ claim 7 in its proper context.

As can be appreciated, Applicants are entitled by law to reasonable claim coverage without being limited to specific features shown in a few examples that are provided in the specification for purposes of explanation and understanding.

Nevertheless, as mentioned above, Applicants have opted to currently amend claim 1 (from which claim 7 is dependent) so as to omit the term “irregularly shaped” thereby removing

any potential ambiguity in claim interpretation. Consequently, Applicants respectfully request withdrawal of the rejection of claim 7 under 35 U.S.C. 112, first paragraph, followed by allowance of the claim.

D. Claim Rejections under 35 U.S.C. §103

Statement of the Rejection

Claims 1-3, 7 and 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murdock (US 5,853,383) in view of Nishimura (US 6,298,533 B1).

Response to the Rejection

Claim 1

Applicants respectfully traverse the rejection of claim 1 because the Office action fails to satisfy the requirements for a proper rejection of this claim under 35 U.S.C. 103(a). Specifically, the rejection fails to provide a proper reason to modify Murdock in view of Nishimura.

In this context, the Office action appears to justify combining Murdock with Nishimura by asserting that: *“Examiner notes that Nishimura is pertinent to the problem to which the applicant is concerned with and therefore is considered relevant art.”*

Applicants acknowledge that such an assertion is indeed reasonable as far as “relevant art” is concerned. However, it can be appreciated that merely asserting that two references are relevant to each other does not provide an adequate rationale for modifying one with respect to the other. Specifically, the Office action fails to disclose a shortcoming in Murdock which would provide a reasonable rationale for modifying Murdock in view of Nishimura.

Notwithstanding the remarks above, Applicants have opted to amend claim 1 so as to incorporate the subject matter of claim 4 that has been indicated as allowable. Consequently, for this amongst other reasons, Applicants respectfully submit that claim 1 is now in condition for allowance and hereby request withdrawal of the rejection followed by allowance of the claim.

Claim 2

Applicants respectfully traverse the rejection of claim 2 because the Office action fails to satisfy the requirements for a proper rejection of this claim under 35 U.S.C. 103(a). Specifically, the rejection fails to provide a proper reason to modify Murdock in view of Nishimura. In this matter, Applicants respectfully draw attention to remarks provided above and submit that these remarks are equally applicable to the rejection of claim 2 as well.

Furthermore, in justifying the rejection of claim 2, the Office action provides the following remark (in pertinent part) as a motivation for modifying Murdock in light of Nishimura: *“It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a process of providing a recess about the hole on the second side, and wherein the melted shaped tip is melted to form a lump having an irregular shape that is confined inside the recess of the substrate without extending up to a level corresponding to the planar surface of the second side, thereby allowing surface mounting of the surface mount module using the planar surface of the second side without additional work being carried out on the lump...”* (emphasis added).

Applicants respectfully point out that this remark constitutes a conclusory statement with no articulated reasoning as to why such a “planar surface” would be desirable (presumably in Murdock). Neither Murdoch nor Nishimura disclose any teaching or suggestion related to “surface mounting,” of the two co-joined objects referred to in the Office action. This is in contrast to Applicants’ claim 2 that is applicable to a surface mount module.

Specifically, as far as Murdock is concerned, one of ordinary skill in the art will recognize that a “planar surface” is neither necessary nor logical in the assembly process described in Murdock wherein two sub-assemblies are attached to each other using adhesive (as described in the reproduced text below; col. 9, lines 26-35):

Circuit board assembly 18 is attached to housing 16 by posts (not shown in FIG. 1) passing through openings 13a and 13b, the ends of the posts being heated/melted in order to heat stake the circuit board assembly 18 to the housing 16. Lower housing 20 is attached to the upper housing 16 by means of adhesive 30, the upper surface 34 of adhesive 30 being adhered to both lower housing 20 and upper housing 16 including the bottom surfaces of wings 15.

Shown partially on the underside of circuit board assembly 18 is a button cell battery 32.

It can be clearly understood from this assembly process taught in Murdock, that it is improper and illogical on the part of the Office action to arbitrarily assert that it would be desirable to modify Murdock in order to provide a planar surface. The impropriety is all the more glaring in light of the fact that Murdock clearly teaches that a button cell battery is located on the underside of circuit board assembly 15, thereby rendering a “planar surface” incongruous.

Notwithstanding the impropriety described above, Applicants have opted to currently amend claim 2 in the interests of moving forward prosecution in the case. As amended, the claim now incorporates the subject matter of claim 4 that has been indicated as allowable.

Consequently, for this amongst other reasons, Applicants respectfully submit that claim 2 is now in condition for allowance and hereby request withdrawal of the rejection under 35 U.S.C. 103(a) followed by allowance of the claim.

Claims 3, 11 and 12

Applicants respectfully submit that each of these claims is allowable for several reasons. One amongst these several reasons is due to the fact that claim 3 is dependent on allowable claim 1, while claims 11 and 12 are each dependent on allowable claim 2. Consequently, claims 3, 11 and 12 are also allowable by law arising from claim dependency. Applicants respectfully request that the rejection under 35 U.S.C. 103(a) be withdrawn followed by allowance of these claims.

Claim 13

Applicants respectfully traverse the rejection of claim 13 because the Office action fails to satisfy the requirements for a proper rejection of this claim under 35 U.S.C. 103(a). Specifically, the rejection fails to provide a proper reason to modify Murdock in view of Nishimura. In this matter, Applicants respectfully draw attention to remarks provided above with respect to claim 2, and submit that these remarks are equally applicable to the rejection of claim 13 as well.

Notwithstanding this shortcoming, Applicants have opted to currently amend claim 13 in the interests of moving forward prosecution in the case. As amended, the claim now incorporates the subject matter of claim 4 that has been indicated as allowable. Consequently, for this amongst other reasons, Applicants respectfully submit that claim 13 is now in condition for allowance and hereby request withdrawal of the rejection under 35 U.S.C. 103(a) followed by allowance of the claim.

Claims 14-20

Applicants respectfully submit that each of these claims is allowable for several reasons. One amongst these several reasons is due to the fact that each of these claims is directly or indirectly dependent on claim 13, which is allowable for reasons cited above. Consequently, claims 14-20 are also allowable by law arising from claim dependency. Applicants respectfully request that the rejection of these claims under 35 U.S.C. 103(a) be withdrawn followed by allowance of the claims.

Cited Art Made of Record

The cited art made of record has been considered, but is not believed to affect the patentability of the presently pending claims.

CONCLUSION

In light of the reasons set forth above, Applicants respectfully submit that pending claims 1-3, 7, and 11-20 are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned representative at (404) 610-5689.

Respectfully submitted,

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I hereby certify that this paper is being electronically transmitted to the Commissioner for Patents on the date shown below:

Date of transmission: 22 April 2009

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